

LIBRARY OF
L. E. APPLE

MEMORANDUM
RM-6246-RC
APRIL 1970

A FUNCTIONAL CLASSIFICATION SYSTEM
OF THE VISUALLY IMPAIRED TO REPLACE
THE LEGAL DEFINITION OF BLINDNESS

Samuel M. Genensky

The **RAND** *Corporation*
SANTA MONICA • CALIFORNIA

V5568
286

MEMORANDUM

RM-6246-RC

APRIL 1970

A FUNCTIONAL CLASSIFICATION SYSTEM
OF THE VISUALLY IMPAIRED TO REPLACE
THE LEGAL DEFINITION OF BLINDNESS

Samuel M. Genensky

HV5568

G286

The RAND Corporation

1700 MAIN ST • SANTA MONICA • CALIFORNIA • 90406

PREFACE

During the past three years The RAND Corporation has sponsored a research project aimed at improving the lot of a large fraction of the nation's legally blind population. As a result of that effort a prototype closed circuit TV system has been developed which helps many of the partially sighted to read printed and handwritten material, to write with a pen or pencil and to carry on other operations which require precise eye-hand coordination. The results of that research are described in RAND Research Memorandum RM-5672-RC and RAND Papers P-3984 and P-4147.* This memorandum is also a product of that effort, even though its primary emphasis is on the need to replace our legal definition of blindness with a functional classification of the visually impaired and the problems faced by members of that community, rather than on the design, fabrication and testing of instrumentation.

The first section of this report contains a discussion of the legal definition of blindness and some of its

*Subsequently published in: "A Closed Circuit TV System for the Visually Handicapped," by P. Baran, S. M. Genensky, H. L. Moshin, and H. Steingold, Research Bulletin of the American Foundation for the Blind, No. 19, June 1969, pp. 191-204; "Some Comments on a Closed Circuit TV System for the Visually Handicapped," by S. M. Genensky, American Journal of Optometry and Archives of American Academy of Optometry, Vol. 46, No 7, July 1969, pp. 519-524; and "A Closed Circuit TV System for the Visually Handicapped and Prospects for Future Research," The Annals of Ophthalmology (to appear May 1970), (with H. L. Moshin, H. Steingold), respectively.

shortcomings. This is followed by the development of a functional classification system of the visually impaired which divides that population into four categories, namely, (1) the functionally blind, (2) the functionally sighted, (3) the functionally sighted with aided mobility and (4) the functionally sighted with neither sighted literacy nor sighted illiteracy.

The second section is devoted to arguing the need for a functional classification system. This includes a discussion of the current plight of the visually impaired. Emphasis is placed upon the unfortunate consequences that have arisen as a result of (1) a failure on the part of the general public, as well as many officials of public and private organizations that serve "the blind", to recognize the heterogeneity of the visually impaired population, and (2) the misapplication of the legal definition of blindness.

In the third and final section, recommendations are made which the author believes will tend to clarify the nature of the visually impaired population, improve public understanding of the capabilities and needs of its members, improve the quality and quantity of services they receive from public and private organizations, and increase their chances of receiving a high quality and relevant education and achieving economic independence.

SUMMARY

A discussion of the legal definition of blindness is given and some of its shortcomings are revealed. This is followed by the development of a functional classification system of the visually impaired which divides that population into four categories, namely, (1) the functionally blind, (2) the functionally sighted, (3) the functionally sighted with aided mobility, and (4) the functionally sighted with neither sighted literacy nor sighted illiteracy.

The need for a functional classification system is then argued. This includes a discussion of the current plight of the visually impaired. Emphasis is placed upon the unfortunate consequences that have arisen as a result of (1) a failure on the part of the general public, as well as many officials of public and private organizations that serve "the blind," to recognize the heterogeneity of the visually impaired population and (2) the misapplication of the legal definition of blindness.

Recommendations are then made which the author believes will tend to clarify the nature of the visually impaired population, improve public understanding of the capabilities and needs of its members, improve the quality and quantity of the services they receive from public and private organizations, and increase their chances of receiving a high quality and relevant education and achieving economic independence.



Digitized by the Internet Archive
in 2015

<https://archive.org/details/functionalclassi00samu>

ACKNOWLEDGEMENTS

The author wishes to thank Dr. E. L. Lowell of the John Tracy Clinic, and Dr. H. L. Moshin, Dr. M. E. Rapp, Dr. F. S. Roberts, Dr. J. E. Rolph and Dr. R. E. Strauch of the RAND Corporation for reading various drafts of this Research Memorandum and making suggestions and criticisms which, when heeded, improved its content and structure.

TABLE OF CONTENTS

PREFACE.....	iii
SUMMARY.....	v
ACKNOWLEDGEMENTS.....	vii
DEFINITIONS OF SPECIAL TERMS AND PHRASES USED IN THIS PAPER.....	x
Section	
1. A DISCUSSION OF THE LEGAL DEFINITION OF BLIND- NESS AND SUGGESTED FUNCTIONAL CLASSIFICATION SYSTEM OF THE VISUALLY IMPAIRED.....	1
2. A PERSPECTIVE ON THE VISUALLY IMPAIRED.....	11
3. RECOMMENDATIONS AND CONCLUDING REMARKS.....	21

DEFINITIONS OF SPECIAL TERMS AND PHRASES USED IN THIS PAPER

<u>TERM OR PHRASE</u>	<u>PAGE</u>
Corrective lenses	5
Functionally blind	8
Functionally sighted	8
Functionally sighted with neither sighted literacy nor sighted illiteracy	9
Functionally sighted with aided mobility	9
Legal definition of blindness	1
Nonfunctionally sighted	8
"Normally" sighted	6
Quasi-functionally sighted	11
Read and write as the literate sighted do	6
Sighted	6
Visually identify familiar objects as the illiterate sighted do	6
Visually impaired	5

1. A DISCUSSION OF THE LEGAL DEFINITION OF BLINDNESS AND A
SUGGESTED FUNCTIONAL CLASSIFICATION SYSTEM OF THE
VISUALLY IMPAIRED

About a year ago I wrote a paper in which I discussed some work which my colleagues and I did on a closed circuit TV system which helps many of the visually impaired to read printed and handwritten material and to write with a pen or pencil.* The first few paragraphs of that paper were devoted to a discussion of definitions of blindness. It was clear to me then as it is now that while the legal definition of blindness may be useful for determining who has the right to take a blindness deduction on his income tax, it nevertheless leaves much to be desired when applied for almost any other purpose. According to the legal definition, a person is considered "blind" if the visual acuity (presumably measured at 20 feet) in his better eye is no better than 20/200 even with the help of correcting lenses,** or if the visual

*"Some Comments on a Closed Circuit TV System for the Visually Handicapped," by S. M. Genensky, American Journal of Optometry and Archives of American Academy of Optometry, Vol. 46, No. 7, July 1969.

**The definition does not make clear what the term "correcting lenses" refers to. Does it refer to ordinary eyeglasses, to microscopic and telescopic systems prescribed for many persons with a severe visual impairment, to monoculars, telescopes and binoculars or to some combination of these correcting devices?

As a result of a conversation with two layers of personnel at the main office of the Internal Revenue Service in Los Angeles, I was informed that "correcting lenses" refers only to ordinary eyeglasses that are worn regularly to assist an individual in maneuvering from place to place. I was specifically told that it does not refer to glasses that are used for reading or for viewing things at a distance while seated or standing still. I believe this interpretation would exclude microscopic and telescopic systems prescribed for persons with a severe visual impairment and also ordinary monoculars, binoculars and telescopes.

acuity in his better eye exceeds 20/200 (with or without the aid of correcting lenses) but the diameter of his visual field in no direction exceeds 20° .*

It is a tragic fact that the legal definition of blindness has been interpreted by many public and private institutions as establishing the criteria by which they are obliged, or by which they have chosen to distinguish between those they should give service to and those they must turn away. This has led to unfair treatment of many visually impaired people who were not legally blind at the time they sought help.**

The numerical values assigned to the visual acuity and the angular measure of field in the legal definition of blindness are not based upon conclusions drawn from a

*Most of us would agree that a visual field, whose diameter in no direction subtends an angle greater than 20° , is small enough to make maneuvering unaided in a strange environment a very hazardous operation. I am led to speculate, however, as to whether a visual field whose greatest diameter subtends an angle of say 25 or 30 degrees is much better than one restricted to 20 degrees for maneuvering unaided through a strange environment.

**Recently I demonstrated our closed circuit TV system to a male, 35 years old, who has been a diabetic for about 20 years and who in 1964 discovered that he was developing diabetic retinopathy. In that year he decided to learn braille because he believed that he would need it in the future to help him hold his job as a computer programmer. He sought assistance in achieving this objective from his home state's department of rehabilitation and from a private organization that serves the blind but was turned down by both of these agencies for the reason that he was not as yet legally blind. He was assured of help by both organizations once he became legally blind.

carefully designed set of experiments aimed at determining those parameters, but probably represent the best estimates of a group of people who, at the time the definition was being considered for adoption, were looked upon as authorities on vision and the visually impaired. I am not convinced that "a carefully designed set of experiments" would have produced a better set of values, but I am convinced that the values that were chosen have proven to be too restrictive. Perhaps a more realistic set of values would have been chosen and a more complex classification system would have been adopted if the group which devised our legal definition of blindness had contained a broader representation of the visually impaired community.

Many people who, with corrective lenses, have as much as 20/70 vision in their better eye and a large visual field are in need of help from public and private organizations which serve "the blind." The same statement is probably true in the case of many people whose visual acuity in their better eye with corrective lenses exceeds 20/200 but whose visual field is such that its greatest diameter subtends an angle somewhat greater than 20° . Many of these people need help while they are in school, and when they are preparing for an occupation or looking for a job, but find that they do not qualify for assistance, because they do not fall within the scope of the legal definition of blindness. They were probably excluded from coverage by

that definition, because the framers of the definition did not consider them to be "blind", and by that term I believe they meant functionally blind. If the framers of the definition had chosen to adopt a definition that distinguished between visually impaired people who are functionally blind, functionally sighted or quasi-functionally sighted, then I conjecture that they might have been willing to adjust the parameters in their definition of blindness to allow more people to be covered by it. They might also have seen the wisdom of calling their definition "the legal definition of visual impairment" rather than "the legal definition of blindness."

The classification of the visually impaired which will be offered presently, I believe, would be more beneficial to the visually impaired and to those who serve or would serve that population than our current definition of legal blindness. I don't believe that an elaborate classification system is warranted, because I don't think that it would have much of a chance of being adopted for use in the real world. I am convinced however that, relative to the visually impaired, we need something better than a system that classifies a man as "blind" or "seeing" solely on the basis of whether or not he has or has not less than a specified visual acuity or a visual field which does or does not subtend a given angular measure. We need a classification system which accounts for the functional capability of an

individual, as well as his apparent visual acuity and the extent of his visual field.

To this end I propose that serious consideration be given to adopting the following classification system, or at least that an attempt be made to develop a better classification system that contains the best features of the one I am about to describe.

Let us begin by making a series of definitions which should make my classification system more understandable, and hopefully more useful.

DEFINITION: Corrective Lenses shall be understood to mean prescription eyeglasses that contain lenses that are at most combinations of lenses found in a conventional ophthalmic or optometric lens kit as well as microscopic spectacles used by persons with very poor visual acuity.

DEFINITION: A person shall be considered to be visually impaired if the visual acuity in his better eye with corrective lenses does not exceed m/n^* or if the visual acuity in his better eye, with or without corrective lenses,

*I am not sure what positive integers should be substituted for m and n in the expression m/n . I am inclined to favor letting $m = 20$ and $n = 70$ or $m = 20$ and $n = 100$. It should be clear, however, that I am not in favor of expanding the legally blind population, but I am sympathetic with the idea of making the legally visually impaired population more inclusive than the current legally blind population.

does exceed m/n but the greatest diameter of his visual field does not exceed an angle of α^0 .*

DEFINITION: A person shall be considered to be sighted or "normally" sighted if he is not visually impaired.

DEFINITION: A visually impaired person shall be considered to be able to read and write as the literate sighted do if he is able, with or without the aid of optical or image enhancement devices, to read printed or handwritten material and to write with a pen or pencil without special tactile guides which assist him to maintain uniform letter size and to write on a straight line.

DEFINITION: A visually impaired person shall be considered to be able to visually identify familiar objects as the illiterate sighted do if he is visually capable of reading and writing as the literate sighted do, but is unable to do so because he has not been taught, or is incapable of being taught to read printed or handwritten material and to write with a pen or pencil, yet is able,

*As in the previous footnote, I am not sure what number should replace the abstract quantity α . Here the problem is even more difficult, because the greatest diameter of a person's visual field could be rather large and yet the contours that delineate the margins of his visual field may be so irregular or so unusually distributed in relation to one another that he may find it hazardous to try to move about unaided in a strange environment. If this be the case, then the current criterion of field restriction should probably be replaced by a more meaningful criterion or set of criteria.

in the course of an examination to determine his visual acuity, to visually identify familiar objects that sighted persons of his same age and approximate intelligence can recognize.

With the help of these definitions the classification system may now be set forth.

A FUNCTIONAL CLASSIFICATION SYSTEM OF THE VISUALLY IMPAIRED

I. The Functionally Blind or Nonfunctionally Sighted:

A person shall be considered to be functionally blind or nonfunctionally sighted if he is visually impaired, but is unable, even with the aid of optical or image enhancement devices, to read and write as the literate sighted do, or to visually identify familiar objects as the illiterate sighted do, and is also unable to maneuver safely in an unfamiliar environment without the aid of a dog, a cane, a sighted person, or a functionally sighted person who has unaided mobility.

II. The Functionally Sighted:

A person shall be considered to be functionally sighted if he is visually impaired, yet is able, with or without the aid of optical or image enhancement devices, to read and write as the literate sighted do or to visually identify familiar objects as the illiterate sighted do, and is also able to maneuver safely in an unfamiliar environment without the aid of a dog, a cane, a

sighted person or a functionally sighted person who has unaided mobility.*

III. Functionally Sighted With Aided Mobility:

A person shall be considered to be functionally sighted with aided mobility if he is visually impaired, yet is able, with or without the aid of optical or image enhancement devices, to read and write as the literate sighted do or to visually identify familiar objects as the illiterate sighted do, but is unable to maneuver safely in an unfamiliar environment without the aid of a dog, a cane, a sighted person, or a functionally sighted person who has unaided mobility.

IV. Functionally Sighted With Neither Sighted Literacy Nor Sighted Illiteracy:

A person shall be considered to be functionally sighted with neither sighted literacy nor

*Other criteria might have been selected to determine whether a person is or is not functionally sighted. For example, I might have chosen to include as other factors that affect functional sightedness the ability to recognize a familiar face at a given distance and under certain lighting conditions, and the ability to safely operate (from a visual standpoint) a motor vehicle. I decided not to do this, because I did not want to make my classification system any more complicated than I absolutely had to, and because I believe that the criteria I selected are far more important to the educational and economic success of the visually impaired than those I chose not to use.

sighted illiteracy if he is visually impaired, and is unable, even with the aid of optical or image enhancement devices, to read and write as the literate sighted do or to visually identify familiar objects as the illiterate sighted do, but is able to maneuver safely in an unfamiliar environment without the aid of a dog, a cane, a sighted person, or a functionally sighted person who has unaided mobility.

The phrase "even with the aid of optical or image enhancement devices", gives a dynamic quality to categories I and IV, because as advances are made in the design, development and fabrication of optical and image enhancement devices, instruments may become readily available which will permit members of category I to move into category III, and members of category IV to move into category II. Similarly if instrumentation is designed, developed and fabricated, which would allow some people in categories I and III to maneuver safely in an unfamiliar environment without the aid of a dog, a cane, a sighted person or a functionally sighted person who has unaided mobility, then these people would shift into categories IV and II respectively.

2. A PERSPECTIVE ON THE VISUALLY IMPAIRED

The proposed classification system of the visually impaired, unlike the current legal definition of blindness, gives full and formal recognition to the important fact that the visually impaired population is not homogeneous. An analysis of K. Trouern-Trend's* data indicates that only about 26 or 27 per cent of the nation's legally blind population are or need be functionally blind, another 7 per cent are known to be functionally sighted with aided mobility and the remaining 66-67 per cent are either functionally sighted, or quasi-functionally sighted.** I venture to say that most of this 66-67 per cent is or could be functionally sighted, i.e., has or could have unaided mobility and can or could handle reading and writing as the sighted do. These people need not and should not be treated as if they were or had to be functionally blind.

If I apply the current legal definition to myself I must conclude that I am legally blind, for I have no vision in my left eye and, measured at 20 feet (or at any distance

*Kenneth Trouern-Trend "Blindness in the United States," Report No. 7635-316, The Traveler's Research Center Inc., November 1968.

**A person shall be regarded as quasi-functionally sighted if he is either functionally sighted with aided mobility, or functionally sighted with neither sighted literacy nor sighted illiteracy, but not both.

greater than 2.5 inches), the visual acuity in my right eye is no better than 8/500 and probably more like 5/500.*

According to my analysis of the available data concerning the distribution of the legally blind as a function of their visual acuity after correction,** more than 60% of the legally blind population has visual acuity as good as, or better than, mine. If we take the legally blind population of the United States to be 400,000 which is probably a fair estimate,*** then we may conclude that more than 240,000 of these people have visual acuity which is as good as or better than mine. This is very interesting, because with my visual acuity and without the aid of a cane, a dog, a human, or an optical device, I maneuver unaided in familiar and strange internal and external environments during any time of the day, read any printed or hand written material that I care to and write with an

*If I claim I can resolve letters when I can see them only indistinctly, then I can push my visual acuity up to 8/500, but if I insist that the letters be clear and distinct, then my visual acuity drops to 5/500.

**Here "after correction" is taken to mean "with correcting lenses" in the vague sense used in the legal definition of blindness.

***Kenneth Trouern-Trend in "Blindness in the United States," Report No. 7635-316, The Traveler's Research Center Inc., November 1968, estimates the legally blind population of the United States to be about 300,000. The National Society for Prevention of Blindness, Inc. in "Estimated Statistics on Blindness in Vision Problems" estimates it to be around 400,000. Norman Bier in "Correction in Subnormal Vision", Butterworths, 1960, estimates that it is "very much larger" than 300,000 (based on an estimated U.S. Population of 180 million). Various ophthalmologists and optometrists have informed me of their visceral estimates which range from 300,000 to in excess of 500,000.

ordinary pen or pencil. I do not use any special mechanical devices to ensure that my writing follows a straight line or to guarantee that my letter size is uniform. It is true that without optical aids, I read by bringing printed or handwritten material up to the end of my nose and write by bringing my right eye to within about 3 cm. of a writing tablet. These techniques are rather startling to the sighted observer, but they have served me well for at least 35 years. Since the development of our closed circuit TV system for the visually handicapped, I have taken advantage of this prototype instrument in my office to help me with my reading and writing. At home I still use the nose to book and nose to paper techniques to read and write respectively. I do use a pair of 8 x 30 binoculars to do such things as (1) observe my children at play, (2) determine the color of a traffic light when it is backed up by a bright and glary sky, (3) read street signs (4) follow illustrated or chalkboard supported discussions and lectures, (5) watch movies and TV, (6) observe the world from an auto, plane or boat, (7) view exhibits at a museum, (8) see plants and animals while in a park or on a long hike or stroll, (9) locate merchandise in a store, and (10) observe theatrical performances, sports events and concerts. I also use a 20 x 48 monocular when the distance which separates me from what I want to see is so great that the object is not satisfactorily resolved by my right eye aided by my 8 x 30 binoculars. In my case, the

only things that I cannot do that sighted people can do and that cause me some inconvenience are drive an automobile and observe facial details.

I have embarked upon this rather detailed description of how I cope visually with the world around me, because I believe that my visual status and my adjustment provide an excellent example of how inappropriate it is to use our legal definition of blindness for anything other than determining whether or not a person should be permitted to take a blindness deduction on his income tax form.

It is an unfortunate but all too common fact that in our society, family, friends and public and private organizations that provide educational, vocational, social and other services to the visually impaired, fail to recognize that they are dealing with a visually heterogeneous population. This results in their contributing to the creation of a large number of functionally blind people who could have been encouraged, taught and trained to be functionally sighted (as well as others who could have been functionally sighted with aided mobility or functionally sighted with neither sighted literacy nor sighted illiteracy). What is even worse is the fact that many of these groups and institutions have also developed stereotyped views of what "the blind" should be taught, what they are capable of learning, what jobs they should be prepared for, what jobs they can secure and hold, what hobbies they would enjoy and what

social activities would meet their needs. Rarely have "the blind" been consulted for their views on these important matters that affect their lives. I conjecture that many actions by a large number of personnel who believe they are serving "the blind" are based upon preconceived and erroneous views regarding the interests and abilities of "the blind", and as a consequence have led to inappropriate, unimaginative, inadequate and unstimulating education and vocational guidance and training for all too many of the nation's visually impaired.

This point cannot be emphasized too strongly, because too often we have tended to lump all the legally blind together and, as a consequence, have treated them as if they were all functionally blind. I believe that this tendency to dichotomize the nation's population into those who can see and those who are functionally blind has grown out of the misuse of our current definition of legal blindness, and the unfortunate tendency of many people and many institutions to oversimplify a very complex problem. It is easier to regard all legally blind people as if each and every one of them were functionally blind, but to do so is absolutely wrong.

Recently a 20 year old college student, who has optic nerve atrophy in both eyes, informed me that when she was 7, she wanted to learn to read printed material and to write

with a pen or pencil. Authorities in the school system in which she was enrolled insisted that she learn braille and forget about learning to read and write as the sighted do. She refused to learn braille until after she learned how to read printed material and to write with a pen or pencil (at her parent's initiative and expense). The authorities regarded her behavior as being highly irregular and informed her parents that she was obviously "disturbed."

I recall that when I was 13 and had completed an eight year program in a "sight-saving class", my parents attempted to enter me in the local high school. I was refused admission by the city's superintendent of schools on the grounds that (1) I was legally blind, (2) the state ran a school for the blind, (3) I should attend that school and no other and besides (4) I might trip or fall on the high school stairs.

I spent a year at the school for the blind where, among other things, I was taught braille. The authorities at the school were very disturbed when they ascertained that I learned braille very rapidly but set it aside in favor of continuing to read printed material and write with a pencil. They tried to convince me that I should give up reading and writing as the sighted do, and act like a well behaved blind person. Fortunately, I was 13 and not 7; otherwise, I believe, they would have succeeded in converting me to a well behaved functionally blind child, which from my point of view would have been a great tragedy.

The following year I was admitted to my home town high school, because the previous superintendent of schools was replaced by the brother of the teacher I had had for grades 1-4 in elementary school. By the way, I never tripped or fell down even one little stair inside or outside of the high school.

My personal experience with our closed circuit TV system for the visually impaired and my observation of more than 50 other people who have tried the device* have convinced me that visual acuity measurements are not necessarily reliable predictors of whether or not a person is visually capable of reading printed or handwritten material or of writing with a pen or pencil without tactile guides. I have watched many people, who could not read ordinary book or newspaper type or write with a pen or pencil, even with optical aids, sit down before the monitor of our closed circuit TV system and read and write as the sighted do.

*For additional information regarding our closed circuit TV system for the visually impaired the reader is referred to "A Closed Circuit TV System for the Visually Handicapped," by P. Baran, S. M. Genensky, H. L. Moshin, and H. Steingold, Research Bulletin of the American Foundation for the Blind, No. 19, June 1969, pp. 191-204; "Some Comments on a Closed Circuit TV System for the Visually Handicapped," by S. M. Genensky, American Journal of Optometry and Archives of American Academy of Optometry, Vol. 46, No. 7, July 1969, pp. 519-524; "A Closed Circuit TV System for the Visually Handicapped and Prospects for Future Research," The Annals of Ophthalmology (to appear May 1970), (with H. L. Moshin, H. Steingold).

The most amazing case of this type that I have as yet encountered involved a 43 year old woman who began losing her eyesight from glaucoma when she was 19. This woman's left eye has been nucleated and the visual acuity in her right eye is zero. She does, however, possess some light projection capability in her right eye. She can see bands of light and dark if fingers are backlighted and held an inch away from her right eye. She cannot resolve even the semblance of fingers if they are front lighted.*

I presented this woman with printed material containing many type sizes and lighted in a variety of ways and at various intensities and found that she could not read any of the material with or without optical aids. With the help of our closed circuit TV system, however, she was able to read typewriter type magnified 4 times at the rate of about 10 words per minute, and to write and draw with a felt pen.

I believe that any responsible ophthalmologist or optometrist would state that this woman has only light projection in her right eye and that her visual acuity is, for all intents and purposes, zero; and yet she read typewriter type magnified 4 times albeit rather slowly. I

*Persons with light projection are often able to use their residual vision to determine the general location of windows through which daylight is entering a room, as well as bright artificial light sources which illuminate an otherwise dark room. They often use this information to orient themselves while in a room or during the process of entering or leaving it.

conjecture that she was able to read the typewriter type and to write and draw with the aid of our closed circuit TV system, because the images she viewed on the screen were comparable to the backlighted fingers held an inch from her right eye. In her case, an image enhancement device proved superior to all the optical devices she had used in the past. What is of paramount interest here, however, is that this woman can read and write as the sighted do even though conventional visual acuity measurements would indicate that this was not possible.

We all recognize that if a person is functionally blind, then, if at all possible, he should learn to utilize braille for reading and writing, make efficient use of recorded and taped material, avail himself of the assistance of readers and learn to get about with the aid of a dog, a cane or a sighted person. On the other hand, a functionally sighted person has no necessity to learn braille unless it is known that, say within a year or two, he will lose his ability to read and write as the sighted do.* In like manner, there is no necessity for a functionally sighted person to learn to get about with the help of a dog, a cane or a sighted person unless it is known that he will soon lose his unaided mobility. A functionally sighted person may wish to

*Like the sighted, he may wish to learn braille to satisfy his intellectual curiosity or to add another skill to his communication arsenal, but not because it is necessary that he acquire this skill to cope successfully with his daily life.

supplement his reading of printed books by availing himself of recorded and taped reading material and the services of live readers. While I do not object to the use of this type of assistance to supplement the reading capacity of the functionally sighted, I do object to its supplanting that capacity.

If I sound as though I am in favor of the visually impaired maintaining and expanding their independence of family, friends and public and private institutions and agencies which are said to serve them, then I am not being misinterpreted. It is essential, yes even vital, to the mental, emotional, and spiritual health of the visually impaired that they be as independent of others as possible. This does not mean that they should not seek and should not be given assistance when they really need it, but it does mean that they should not be given help when they don't need it. They should not be placed or be permitted to place themselves in an unnecessary state of dependency.

3. RECOMMENDATIONS AND CONCLUDING REMARKS

As was stated earlier the legal definition of blindness dichotomizes the nation's population into those who can see and those who are "blind". All too often personnel of private and public organizations that are convinced they are serving "the blind" have the mistaken view that all "the blind" are in fact functionally blind. This has led to their regarding all the visually impaired who came to them for help as being members of a homogeneous group all of whom are functionally blind. This unfortunate state of affairs need not and should not be tolerated by our nation.

RECOMMENDATIONS

1. The federal and state governments of the United States should adopt the proposed, or an improved version of the proposed, functional classification system of the visually impaired as a replacement for the current definition of legal blindness.

Little progress can be made in improving the lot of the visually impaired until and unless the national and state governments officially recognize the heterogeneity of the visually impaired population. This follows, I believe, from the fact that many organizations that serve "the blind" look to the federal or to state governments for direct or indirect financial assistance for themselves or for those they serve. Hence they are willing to follow any plan for determining whom they will or will not serve which does not run completely counter to their own thinking and which appears to be in

harmony with what they know, or believe to be, the desires of the governmental bodies which provide them or those they serve with financial assistance. Furthermore, most of the private organizations that do not receive governmental support find it much easier to accept the legal definition of blindness than to develop and adopt a definition or a classification system of their own. I believe that should the national and state governments adopt my classification system, or an improved version of it, all public and nearly all private organizations that serve the visually impaired would be willing to use the adopted classification system and, hopefully, would also make the adjustments that would be needed to successfully cope with the more complex problems which are involved in serving a heterogeneous population.

2. The federal and state governments of the United States should support a program aimed at educating the public, as well as officials of public and private organizations that serve the visually impaired, concerning such things as (a) the importance of regarding the visually impaired population as being heterogeneous; (b) the distinctly different kinds of problems faced by persons who fall in each of the subdivisions of the adopted functional classification system, as well as problems common to members of two or more subdivisions; and (c) techniques that might be used to help the visually impaired cope with and master their difficulties.

It is very important that the general public be informed about the nonuniformity of the visually impaired population, the problems that its members face and what can and should

be done to help them help themselves. I venture to conjecture that most sighted people have many misconceptions concerning the visually impaired, and that they are in need of factual information that might help to improve their knowledge and spark their desire to support efforts aimed at improving the lot of the visually impaired. One technique that might be useful in this regard would be to present television programs, in play or documentary form, that show the visually impaired as they actually are, what can be done for them and what they can do for themselves.

3. Public and private organizations that serve the visually impaired should be encouraged to involve those they serve in the planning and decisionmaking processes that govern the quality, quantity and kinds of services they receive.

In the past we have emphasized organizations for the blind and in recent years we have begun to see the development of organizations of the blind. I would like to see more emphasis on the of and less on the for, and of course, I would also like to see "blind" replaced by "visually impaired." I am confident that most organizations that serve "the blind" are not basically averse to greater participation by those they serve in their organizational planning and decisionmaking processes; but only a few of them will actively attempt to increase such participation without some form of external encouragement.

4. Governmental and private organizations should encourage and support programs aimed at (a) providing members of the visually impaired community with the opportunity of receiving high quality and relevant education and vocational training, (b) instilling in them an appreciation and a desire to take full advantage of this opportunity, (c) insisting that they put forth the best that is within them so as to increase the probability of their achieving success in their chosen fields of endeavor, and (d) assisting them, when necessary, in finding and securing jobs that are in harmony with their training, interests and abilities.

By "high quality and relevant education and vocational training," I mean instructional programs that are designed to prepare the visually impaired to successfully compete, economically and socially, in the sighted community and to build up their confidence and self esteem by emphasizing what they can do rather than what they cannot do, by making them aware of what others like themselves have succeeded in accomplishing, by encouraging them to follow vocational or avocational pursuits that they would like to engage in, by not being too quick to discourage them from following educational and training paths that, to the sighted, may appear to be beyond the capabilities of the visually impaired, and by not closing an education or training path merely because a particular visually impaired person failed when he chose to follow that path.

CONCLUDING REMARKS

No group in our society will thrive and prosper if our society does not (1) provide members of that group with high quality and relevant educational and vocational training opportunities, (2) instill in them an appreciation and desire to take maximum advantage of those opportunities, (3) insist that they put forth the best that is within them in order to increase the probability of their achieving success in their chosen field of endeavor, and (4) actively assist them, when necessary, in finding and securing jobs that are in harmony with their training, interests and abilities.

Unfortunately our society has failed many of its minority groups by not carrying out this four point program, and among the groups it has failed the most is the one that is composed of the visually impaired. These people have rarely been pressed to put forth the best that is within them, and those who are convinced that they are serving "the blind" have often been content to let them get by with acquiring a mediocre education and training for a job that is far below their existing or potential capabilities. I believe that this attitude by public and private organizations that claim to serve "the blind" has been disastrous for many of the visually impaired, because it has doomed them to a life of partial or total financial and emotional dependency. When a visually impaired person is in competition with a sighted person for a job, he must be at least as intelligent

as his rival, must be at least as well trained, must have at least as much experience and must have much more drive and tenacity than his competitor, if he is to have any hope of being selected over his rival. A man with those qualifications is rarely found among the mediocre, and an educational and vocational training system that caters to the mediocre cannot be expected to produce people of this caliber.

I believe that when we learn to apply the four point program outlined on page 25 to the visually impaired, we will provide the nation with many more leaders in the arts, sciences, crafts, professions and business; produce an educated and trained subgroup from within the visually impaired community that the general membership can look to for guidance, encouragement and stimulation; and hopefully raise the overall achievement level of all the nation's visually impaired. We may also generate desperately needed leadership for that group from within the group, but I recognize that many, or perhaps most, of the visually impaired who "make it" in our society, will rapidly amalgamate into the "normally" sighted community and will have little or nothing more to do with those they have left behind. Nevertheless, I would like to believe that a few of those who do achieve success in the sighted community will decide to provide those they left behind with the leadership, guidance and encouragement they so urgently need.

A FUNCTIONAL CLASSIFICATION SYSTEM OF THE VISUALLY IMPAIRED TO
REPLACE THE LEGAL DEFINITION OF BLINDNESS